KIESELMANN
FLUID PROCESS GROUP

Operating instructions

- Translation of the original -

Overflow valves

Typ 5076

DN 10 - DN100

10.8.12

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2. Information for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.

Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN service team will naturally be at your disposal.

3. Marking of security instructions in the operating manual

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which may cause severe personal injury or death.
	ATTENTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTE	Marks application hints and other information which is particularly useful.

4. Safety instructions

4.1 Field of application

The overflow valve is used to set the liquid pressure in a section of a closed circular pipeline, in tanks and vessels in plants of the food and drink industry, pharmaceutical and chemical industries as well as in biotechnology.

ATTENTION

- To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.

4.2 General safety instructions

DANGER

- Dismantling the valve or valve assemblies from the plant can cause injuries from fluids or gases flowing out.
  Dismantle the valve or valve assembly only when the plant has been rendered pressure-less and free of liquid and gas.
- Danger of injury from liquids flowing from outlet “B“ when opening the valve.
  According to the position of the valve, outlet pipes or draining devices must be fitted to achieve splash-free draining.

4.3 General notes

NOTE

- All data are in line with the current state of development. Subject to change as a result of technical progress.

5. Function

Depending on the set operating pressure, the valve opens up at an operating pressure greater than the setting value and closes when the operating pressure is less than the setting value. In the operating state the valve is partially open, depending on the currently set pressure. If the operating parameters do not vary, the operating pressure in front of the valve remains constant. If the operating parameters vary (volume fluctuation), the pressure has to be kept at a constant level by adequate control means (pumps). Independently of the operating pressure the valve can be opened completely by pneumatic control (cleaning).

6. Installation informations

6.1 Installation instructions

Installation position

Preferably, the valve should be installed vertically on connection "A" (Fig. 2 / page 7). Valves with a set pressure ≦ of 0.5 bar are generally installed vertically. The valve should be installed so that no fluids remain in the housing due to the orientation of outlet "B". External dynamic effects caused by installation must be avoided.

6.2 Welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding.

To prevent damage, welding should be undertaken by certified personnel (EN287). Use the TIG (Tungsten Inert Gas) welding process.

NOTE

Impurities can cause damage to the seals and seals area. Clean inside areas prior to assembly.
To avoid a distortion of the components, all welding parts must be welded to stress-relieved.

7. Service and maintenance

7.1 Maintenance

The maintenance intervals depend on the operating conditions

- temperature, temperature-intervals
- medium and cleaning medium
- pressure and opening frequency

We recommend replacing the seals every 1 years. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

NOTE

		Lubricant recommendation
EPDM; Viton; K-flex; NBR; HNBR	⇨	Klüber Paraliq GTE703*
Silicone	⇨	Klüber Sintheso pro AA2*
Thread	⇨	Interflon Food*

*) *It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.*

7.2 Cleaning

Optimum cleaning is done when the pipelines are cleaned and the valve is open.

8. Limit position feedback

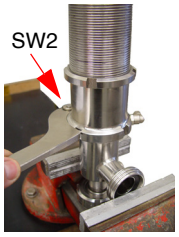
With the installation of a sensor, the valve setting OPEN and CLOSED can be queried. The sensor mounting is clamped in the spindle between two hexagon screws (15).

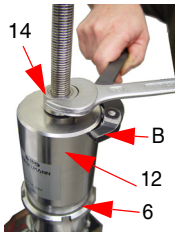
9. Technical Data

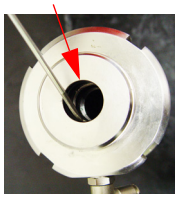
Model:	Overflow valve, pneumatic lifting, spring loaded	
Valve size:	DN 10 - DN 100	
Connections:	• Welding end • Male part DIN11851 • Liner/nut DIN11851	
Temperature range:	• Ambient temperature: • Product temperature: • Sterilization temperature:	+4° to +45°C +0° to +95°C medium dependent EPDM +140°C (SIP 30 min) PTFE +130°C (SIP 30 min) HNBR +130°C (SIP 30 min) NBR +110°C (SIP 30 min)
Setting range:	DN 10 - DN 50: DN 65: DN 80: DN 100:	0,5 - 10,0 bar 0,5 - 8,0 bar 0,5 - 6,0 bar 0,5 - 4,0 bar
Vacuum:	1,5 - 10^{-6} mbar x $^{l}/_{s}$ (test pressure 0,5mbar)	
Control air:	**Control air pressure:** • 5,5 - 8,0 bar	**Quality of control air:** • ISO 8573-1 : 2001 quality class 3
Material: in product contact *(varied according to valve design)*	Stainless steel:	1.4301 / AISI304 1.4404 / AISI316L
	Surfaces:	Ra < 0,8µm e-poliert
	Material of seals:	EPDM (FDA) PTFE (FDA) HNBR (FDA) NBR (FDA)

10. Disassembly and assembly

see Fig. 1 / page 6







10.1 Disassembly

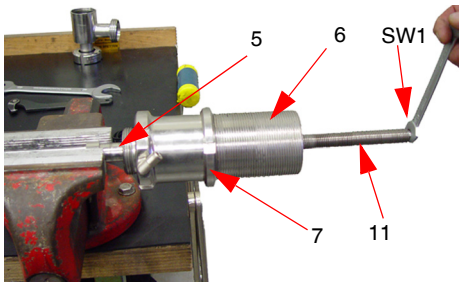
- Disconnect control air lines and electrical lines.
- Screw vent nut (14) against the adjustment nut (12) and after contact, turn one more revolution (counter with an open-end spanner at SW1). This raises the valve disc (4) and relives pressure on the seal (D1).
- Screw out the complete valve insert from the housing (1) with a hook spanner at SW2.
- Remove the O-ring (D4) from the housing (1).
- Unscrew hexagon nut / flow cone (2) (counter with an open-end spanner at SW1).
- Remove disc (3), seal (D1) and valve disc (4) from the spindle (5).
- Clamp the valve insert at the threads (G1) in a vise with soft jaws.
- Measure and log the pressure setting dimensions (Y) (see Fig. 2 / page 7).
- Unscrew nut (15). If a sensor mounting is attached, remove it and unscrew the second nut (15).
- Loosen locknut (7).

➤ **Pressure spring - decompress**

NOTE

- To reduce wear on the threaded connection at the adjustment nut (12) and the spring housing (6), repeat the following process until the pressure spring (10) has been depressurized or the adjustment nut (12) has been screwed out.
- Use the bore (B) to screw out the adjustment nut (12) until the lower spindle (5) is against the housing (1).
- Counter the upper spindle (11) at SW1 and turn out the vent nut (14) far enough that no more resistance is felt. The lower spindle (5) lowers again.

- Completely screw out vent nut (14) and adjustment nut (12) and remove.
- Remove pressure spring (10) and if need be, the spring guide (9b).
- Clamp the valve insert at the lower spindle (5) in a vise with soft jaws.
- Unscrew the upper spindle (11) at SW1 from the lower spindle (5).
- Remove all parts from the spring guide.
- Remove lip ring (D2), O-ring (D3) and O-ring (D5).



10.2 Assembly

- Thoroughly clean and slightly lubricate mounting areas and running surfaces (see “Maintenance” on page 4).
- Assemble in reverse order.

NOTE

- Pressure setting dimension "Y" = The same pressure setting dimension Y yields the same set pressure.
- Assemble the lower spindle (5) and upper spindle (11) with removable thread locker.
- Contact between the vent nut (14) and the adjustment nut (12) does not close the valve disc leak tight against fluids. For a leak tight seal, position the vent nut (14) at a distance of at least 2 mm from the adjustment nut (12) and counter it with the hexagon nut (15) to hold its position.

11. Pressure setting

- Release hexagon nut (15) (2x) from vent nut (14).
- Screw the vent nut (14) towards adjustment nut (12) and add one revolution after touching. This causes the valve disc (4) to be lifted up and the seal (D1) to be relieved of pressure.
- Release locknut (7).
- Turn the adjustment nut (12) to set the correct pressure. Then counter the adjustment nut (12) with the locknut (7) again.
- Position vent nut (14) at a distance of at least 2 mm from the adjustment nut (12) and counter it with the hexagon nut (15) to hold its position.

12. Drawing

1 = Housing types
a) weld - weld
b) male - male
c) liner/nut - male

2 = a) Hexagon nut self-locking
b) Flow cone (optional)

3 = Disc

4 = Valve disc

5 = Lower spindle

6 = Spring box

7 = Locknut

8 = Lifting piston

9 = a) Spring disc
b) Spring guide (according to valve design)

10 = Pressure spring

11 = Upper spindle

12 = Adjustment nut

13 = Sliding ring

14 = Vent nut

15 = Hexagon nut

16 = Sensor mounting (optional)

Seal kit

D1) = Seal

D2) = Seal

D3) = O-Ring

D4) = O-Ring

D5) = O-Ring

LA) = Air connection

B = Bore

G1 = Thread connection secured with Lock nut removable (Loctite 243)

G2 = Thread connection secured with Lock nut removable (Loctite 243)

SW = Wrench size

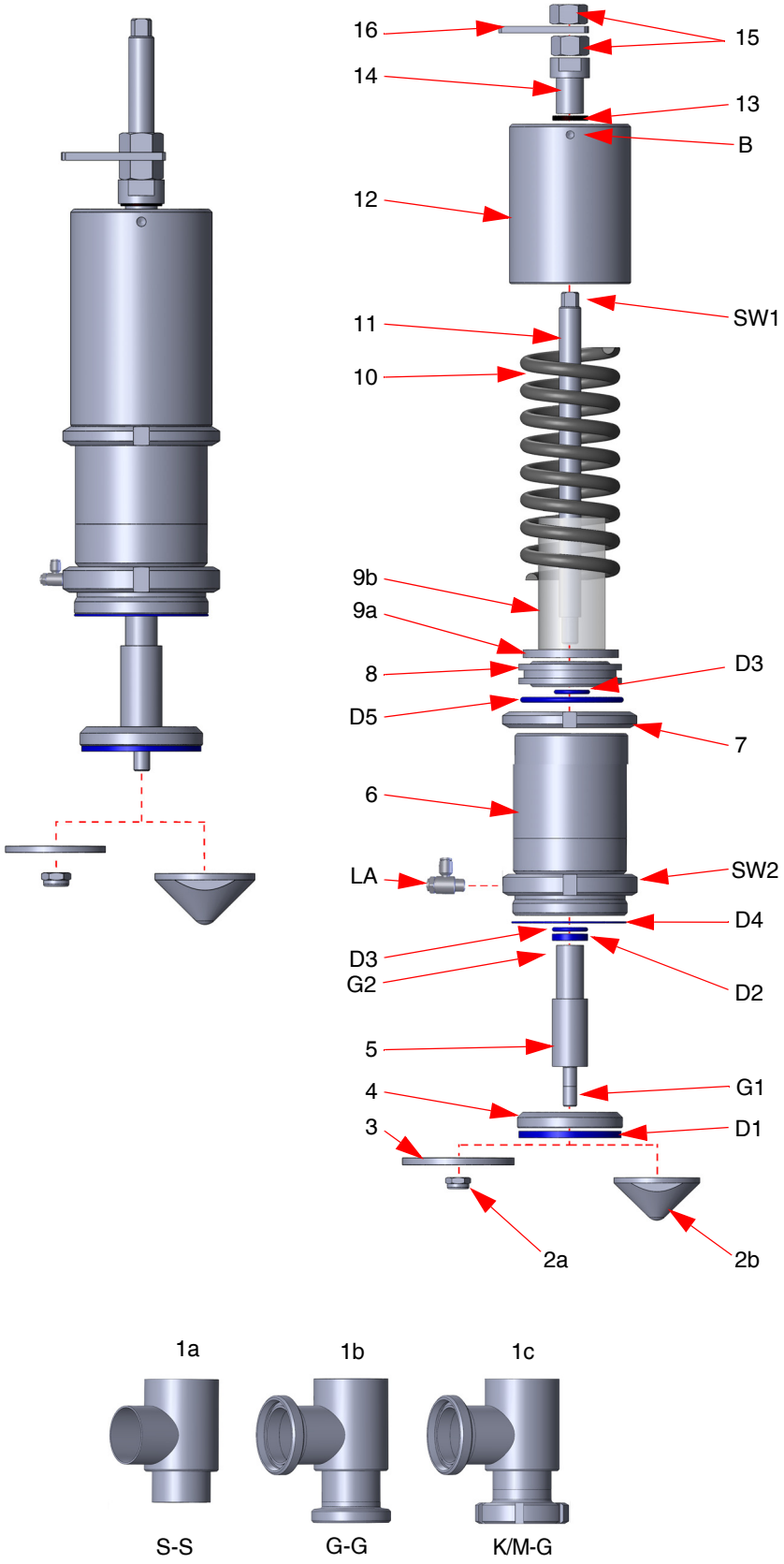


Fig. 1

13. Dimensions

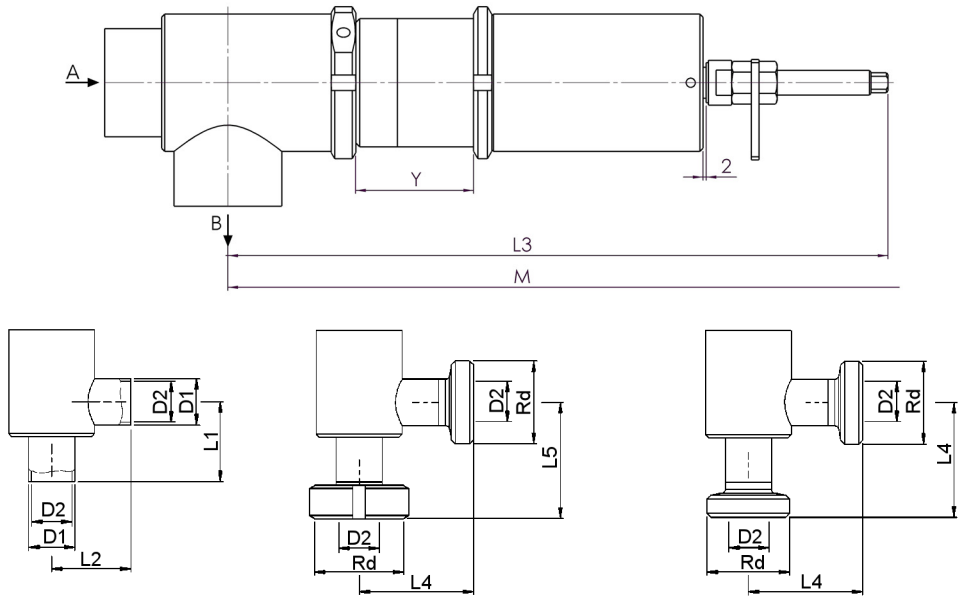


Fig. 2

DN	D1	D2	Rd	L1	L2	L3	L4	L5	M
10	ø 10	ø 14	Rd 28x1/8	35	35	303	56	52	~ 370
15	ø 16	ø 20	Rd 34x1/8	35	35	300	52	48	~ 370
20	ø 20	ø 24	Rd 44x1/6	40	40	298	59	53	~ 360
25	ø 26	ø 30	Rd 52x1/6	50	50	326	72	65	~ 400
32	ø 32	ø 36	Rd 58x1/6	55	55	323	77	70	~ 400
40	ø 38	ø 42	Rd 65x1/6	60	60	330	82	75	~ 430
50	ø 50	ø 54	Rd 78x1/6	70	70	331	93	86	~ 430
65	ø 66	ø 70	Rd 95x1/6	80	80	428	105	97	~ 560
80	ø 81	ø 85	Rd 110x1/4	90	90	500	115	108	~ 650
100	ø 100	ø 104	Rd130x1/4	100	100	511	130	120	~ 680

Valves that do not meet the catalogue standards, can lead to dimensional deviations.

14. Seal kits (D1-D5)

DN	NBR	EPDM	PTFE/EPDM
10	5277 010 000-060	5277 010 000-054	5277 010 000-053
15	5277 015 000-060	5277 015 000-054	5277 015 000-053
20	5277 020 000-060	5277 020 000-054	5277 020 000-053
25	5277 025 000-060	5277 025 000-054	5277 025 000-053
32	5277 032 000-060	5277 032 000-054	5277 032 000-053
40	5277 040 000-060	5277 040 000-054	5277 040 000-053
50	5277 050 000-060	5277 050 000-054	5277 050 000-053
65	5277 065 000-060	5277 065 000-054	5277 065 000-053
80	5277 080 000-060	5277 080 000-054	5277 080 000-053
100	5277 100 000-060	5277 100 000-054	5277 100 000-053

KIESELMANN
FLUID PROCESS GROUP

Declaration of incorporation

Translation of the original

Manufacturer / authorised representative:	KIESELMANN GmbH Paul-Kieselmann-Str. 4-10 75438 Knittlingen Germany
Authorised representative, for compiling technical documents:	Achim Kauselmann KIESELMANN GmbH Paul-Kieselmann-Str. 4-10 75438 Knittlingen Germany

Product name	**Function**
pneum. Lift actuators	Stroke movement
pneum. Rotary actuators	Rotary movement
Ball valves	Media cutoff
Butterfly valves	Media cutoff
Single seat valves	Media cutoff
Flow control valves	Control of liquefied media
Throttle valve	Control of liquefied media
Overflow valve	Definition of fluid pressure
Double seat valve	Media separation
Bellow valves	Sampling of liquids
Sampling valves	Sampling of liquids
Two way valves	Media cutoff
Tankdome fitting	Prevention of overpressure and vacuum, Tank cleaning

The manufacturer hereby states that the above product is considered as an incomplete machine in the sense defined in the Directive 2006/42/EC on Machinery. The above product is exclusively intended to be installed into a machine or an incomplete machine. The said product does not yet conform to all the relevant requirements defined in the Directive on Machinery referred to above for this reason.

The specific technical documents listed in Appendix VII, Part B, have been prepared. The Authorized Agent empowered to compile technical documents may submit the relevant documents if such a request has been properly justified.

Commissioning of an incomplete machine may only be carried out if it has been determined that the respective machine into which the incomplete machine is to be installed conforms to the regulations set out in the Directive on Machinery referred to above.

The above product conforms to the requirements of the directives and harmonized standards specified below:

- DIN EN ISO 12100 Safety of machinery

Knittlingen, 10. 08. 2012

Klaus Dohle
General Director